

**What is Claimed is:**

1. A Schmitt trigger circuit with low-voltage devices, capable of receiving a high-voltage input signal, but being consisted by only using low-voltage devices, adapting a plurality of Metal-Oxide Semiconductor Field Effect Transistors (MOSFET) to form a low-cost Schmitt trigger circuit, comprising:

a main circuit 21, being composed of three P-type and three N-type MOSFETs, and the operation thereof being controlled by the voltage over a node A and a node B;

a first protection circuit, being composed of four P-type MOSFETs, for ensuring the voltage at the node A is larger than a specified low voltage value; and

a second protection circuit, being composed of four N-type MOSFETs, for ensuring the voltage at the node B is smaller than a specified high voltage value.

2. The Schmitt trigger circuit of claim 1, wherein the maximum voltage receivable by the plural MOSFETs is 2.5V.

3. The Schmitt trigger circuit of claim 1, wherein the specified low voltage value is 0.8V.

4. The Schmitt trigger circuit of claim 1, wherein the specified high voltage value is 2.5V.

5. The Schmitt trigger circuit of claim 1, wherein one of the N-type MOSFETs in the second protection circuit is a native  $V_t$  MOSFET.